

What is claimed is:

1. A system for quieting an area where sonar is to be employed, said system comprising:

a cavitator capable of deflecting oncoming fluid such that an envelope is created in a wake of said cavitator;

a sonar array mounted on a face of said cavitator; and

a gas source for supplying gas to the envelope such that the supplied gas creates a cavity of gas within the envelope;

whereby the formed gas cavity reduces turbulent flow of the fluid in the area where sonar is to be employed and thus quieting the area.

2. The system in accordance with claim 1, said system further comprising a strut for supporting said cavitator to a mobile marine platform.

3. The system in accordance with claim 2, wherein strut encompasses a plurality of openings in fluid communication with said gas source.

4. The system in accordance with claim 3 further comprising a valve for controlling the supplied gas from said gas source.

5. The system in accordance with claim 4, wherein said sonar array comprises a plurality of sonar array elements embedded in said face.

6. The system in accordance with claim 5, wherein said sonar array is a forward-looking type thereby allowing an operation of said sonar array to be substantially isolated from the turbulent flow of the fluid.

7. The system in accordance with claim 6, wherein said cavitator is a plate normal to said strut.

8. The system in accordance with claim 6, wherein said cavitator is selected from a group of a disk, cone or hemispherical shape.

9. The system in accordance with claim 1 further comprising a valve for controlling the supplied gas from said gas source.

10. The system in accordance with claim 9, wherein said sonar array comprises a plurality of sonar array elements embedded in said face.

11. The system in accordance with claim 10, wherein said sonar array is a forward-looking type thereby allowing an operation of said sonar array to be substantially isolated from the turbulent flow of the fluid.

12. The system in accordance with claim 11, wherein said cavitator is a plate positioned normal to the oncoming fluid.

13. The system in accordance with claim 11, wherein said cavitator is selected from a group of a disk, cone or hemispherical shape.

14. The system in accordance with claim 3, wherein said strut is extendable.

15. The system in accordance with claim 14 further comprising a valve for controlling the supplied gas from said gas source.

16. The system in accordance with claim 15, wherein said sonar array comprises a plurality of sonar array elements embedded in said face.

17. The system in accordance with claim 16, wherein said sonar array is a forward-looking type thereby allowing an operation of said sonar array to be substantially isolated from the turbulent flow of the fluid.

18. A method for reducing hydrodynamic noise associated with high speed movement of a sonar array in a marine environment, said method comprising the steps of:

providing a cavitator;

moving said cavitator through the marine environment at a speed sufficient for said cavitator to create an envelope in a wake of said cavitator; and

injecting a gas to the envelope to create a gas cavity between the sonar array and any acoustic sources aft of the sonar array such that the hydrodynamic noise associated with the high speed movement is reduced.